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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/826,789 | 04/05/2001 | Masanori Suzuki | 64753 CCD | 4081 |

7590 10/08/2004

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EXAMINER

NOTE, JANIS L

ART UNIT

PAPER NUMBER

1756

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 09/826,789 | Applicant(s) SUZUKI ET AL. | |
| | Examiner Janis L. Dote | Art Unit 1756 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-22, 30 and 32-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8, 21, 30 and 39 is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-20, 22, 32-38 and 40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The examiner acknowledges the amendments to claims 10, 13, and 21, filed on Jul. 29, 2004. Claims 1-6, 8-22, 30, and 32-40 are pending.

2. The "Amendment to the claims" section filed on Apr. 29, 2004, was held not to be in compliance with 37 C.F.R. 1.121 for the reasons discussed in the Notice of Non-compliant Amendment mailed on Jul. 19, 2004. Accordingly, the "Amendment to the claims" section filed on Apr. 29, 2004, has not been entered.

3. The rejection of claims 10-22 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Oct. 27, 2003 (CTNF102703), paragraph 6, has been withdrawn in response to the amendments to claims 10 and 13 filed on Jul. 29, 2004.

The terminal disclaimer filed on Apr. 29, 2004, disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent No. 6,593,048 has been reviewed and is accepted. The terminal disclaimer has been recorded. Accordingly, the rejections under the judicially created doctrine of obviousness-type double patenting of claims 13-18 and 32-36 over claims 2 and 19 of US Patent No. 6,593,048 B2 (Sasaki) in view of Diamond, Handbook of Imaging Materials, pp. 162-168; of claims 19 and 37 over

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claims 2, 8, and 19 of Sasaki in view of Diamond, Handbook of Imaging Materials, pp. 162-16; of claims 22 and 40 over claims 2 and 19 of Sasaki in view of Diamond, Handbook of Imaging Materials, pp. 162-168, further in view of US 5,866,289 (Asanae'289); and of claims 10-12 over claim 20 of Sasaki in view of US 5,771,426 (Oka) and Diamond, Handbook of Imaging Materials, pp. 165-168, set forth in CTNF102703, paragraphs 20-23, respectively, have been withdrawn.

4. The amendment filed on Sep. 26, 2003, is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The new paragraph at page 56, between lines 5 and 6, of the specification, filed on Sep. 26, 2003, states that "[a]ll values of saturation magnetization of toners set forth in the following Examples and Comparative examples were determined at a magnetic field strength of 10 kOe, and are, therefore values of saturation magnetization at a magnetic field of 10 kOe."

The disclosure in the new paragraph lacks antecedent basis in the originally filed specification. As noted by applicants

in their response filed on Sep. 26, 2003, the paragraph bridging pages 12 and 13, the originally filed specification does not "expressly disclose" the magnetic field strength of 10 kOe. Furthermore, there is no evidence of record that there is any implicit disclosure of a magnetic field strength of 10 kOe.

Applicants are required to cancel the new matter in the reply to this Office Action.

Applicants' arguments filed on Apr. 29, 2004, have been fully considered but they are not persuasive.

Applicants assert that the new paragraph filed on Sep. 26, 2003, adding a statement that the saturation magnetization of the toner in the examples and comparative examples was determined at magnetic field of 10 kOe "simply constitutes an express description of a property inherent in an already disclosed specific material, and as such, does not introduce new matter."

However, the question is, would a person having ordinary skill in the art, upon reviewing the disclosure in the originally filed specification, have concluded with a reasonable degree of certainty that the saturation magnetization values reported for the toners exemplified in the examples and comparative, were determined at a magnetic field of "10 kOe." Based on the evidence in the originally filed specification, the

answer is "no." As discussed in the above objection, there is no disclosure in the originally filed specification of a magnetic field of 10 kOe. Nor is there disclosure in the originally filed specification that the reported toner saturation magnetizations in the examples and comparative examples of the specification were determined at a magnetic field of 10 kOe. Moreover, the Rule 132 declaration, executed by Masanori Suzuki on Aug. 1, 2003, filed on Sep. 26, 2003, merely states that the values of the saturation magnetizations in the examples and comparative examples were determined in a magnetic field of 10 kOe. There is no evidence showing that the saturation magnetization values reported in the examples and comparative examples can only be determined in a magnetic field of 10 kOe. Nor is there any evidence in the present record showing that a magnetic field of 10 kOe is the standard field in the magnetic toner art to determine the saturation magnetization of toners. "To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient."

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MPEP 2163.07(a), citing In re Robertson, 169 F.3d 743, 745, 49 USPQ2d, 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (emphasis added). Moreover, applicants' statement that "when the magnetic field is not less than 5 kOe, the saturation magnetization is almost the same for different values of magnetic field although the profile of the magnetization curve is different" is mere attorney argument. Applicants have not provided any evidence supporting their statement. Accordingly, the objection stands.

5. The disclosure is objected to because of the following informalities:

The use of trademarks, e.g. Coulter Counter [sic: COULTER COUNTER] at page 18, line 19, and Henschel mixer [sic: HENSCHEL MIXER] at page 56, line 21, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. These examples are not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any

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manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-6, 9, 20, and 38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Instant claims 1, 20, and 38 and claims dependent thereon recite that the toner has a saturation magnetization of 10 emu/g to 25 emu/g at a magnetic field of 10 kOe.

The originally filed specification does not provide an adequate written description of the saturation magnetization recited in the instant claims. The originally filed

specification at page 11, line 23, to page 12, line 1, and at page 17, lines 4-5, merely discloses that the toner has a saturation magnetization of 10 emu/g to 25 emu/g. As noted by applicants in their response filed on Sep. 26, 2003, the paragraph bridging pages 12 and 13, the originally filed specification does not "expressly disclose" the magnetic field strength of 10 kOe. There is no disclosure in the originally filed specification that the saturation magnetization range of 10 emu/g to 25 emu/g is determined at a magnetic field of 10 kOe as recited in the instant claims.

Applicants' arguments filed on Apr. 29, 2004, have been fully considered but they are not persuasive.

Applicants assert that the amendment adding the paragraph at page 56 of the specification, filed on Sep. 26, 2003, does not introduce new matter. Applicants assert that it "merely expressly describes a property inherent in materials (toners of the Examples and Comparative Examples) already specifically disclosed in the original specification," and "establishes that the saturation magnetization values in the present application are values determined at a magnetic field of 10 kOe."

However, for the reasons discussed in paragraph 4 above, the disclosure in the amendment at page 56 of the specification is considered to be new matter. Moreover, as previously

asserted by applicants the amendment at page 56 of the specification states that the particular values of saturation magnetization of the particular toners exemplified in the examples and comparative examples were determined at a magnetic field of 10 kOe. The Rule 132 declaration, executed by Masanori Suzuki on Aug. 1, 2003, filed on Sep. 26, 2003, merely states that "all these values of the saturation magnetizations in the examples and Comparative examples . . . were determined in a magnetic field of 10 kOe." The evidence shown in the declaration is limited to only the particular toners exemplified in the examples and comparative examples of the specification. The instant claims are not so limited: the magnetic toners are not limited to the particular toner compositions exemplified in the examples. Furthermore, as discussed in the rejection above, the originally filed specification merely discloses the range of 10 to 25 emu/g. There is no disclosure in the originally filed specification that would have led a person having ordinary skill in the art to conclude with a reasonable degree of certainty that the recited range of saturation magnetization of 10 to 25 emu/g in the instant claims was indeed determined at a magnetic field of 10 kOe. As shown in European Patent 0936507 (EP'507), EP'507 discloses that magnetic toners comprising magnetic particles blackened by carbon black may have a

saturation magnetization range of 7.5 to 65 emu/g, preferably 10 to 60 emu/g at a magnetic field strength of 1 kOe. Page 13, lines 8-11. The lower end of the EP'507 preferred range of 10 to 60 emu/g determined at magnetic field of 1 kOe overlaps the range of 10 to 25 emu/g recited in the instant claims. "To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." MPEP 2163.07(a), citing In re Robertson, 169 F.3d 743, 745, 49 USPQ2d, 1949, 1950-51 (Fed. Cir. 1999) (citations omitted). Accordingly, the rejection stands.

8. The recitation "toner contains carbon black on the inside thereof, the amount of said carbon black is in the range of 6 wt.% or less" in instant claims 5, 18, and 36 is interpreted to mean that the toner comprising the magnetic material surface-coated with a coloring agent further comprises carbon black in an amount of 6 wt% or less. This definition is consistent with the disclosure at page 26, lines 16-19, of the specification,

which discloses that "[t]he best is that no carbon black is contained inside the toner from the viewpoint of the occurrence of the fogging of the background." Applicants have agreed to the examiner's definition. See the amendment filed on Nov. 12, 2002, page 9, lines 10-13. The following rejections have been made based on this definition.

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 32-34, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,733,699 (Asanae' 699) combined with European Patent 0936507 A2 (EP' 507).

Asanae' 699 discloses an image forming apparatus comprising a developer cleaner 5 comprising a magnetic toner and a developer carrier member 8 carrying a two-component developer. See Fig. 2, and col. 5, lines 31-35 and 62-65. Asanae' 699's two-component developer is within the compositional limitations recited in the instant claims, but for the particular magnetic material surface coated with a pigment as recited in the instant claims. Asanae' 699's two-component developer comprises a magnetic carrier and a chargeable magnetic toner. The magnetic carrier and magnetic toner are present in a weight ratio of

magnetic carrier to magnetic toner between 10:90 to 90:10. The magnetic toner comprises a binder resin and a magnetic powder and has a volume resistivity of not less than $10^{13} \Omega \cdot \text{cm}$. Col. 2, lines 25-29. The magnetic toner preferably comprises 20 to 60 wt% of magnetic powder. Col. 3, lines 14-15.

Asanae'699 discloses that its two-component developer can form a magnetic brush that can develop an electrostatic latent image on an image carrier to form a toner image and recover toner remaining on the surface of an image carrier after the toner image is transferred to a recording material. Thus, clear and high quality images can be subsequently obtained. Col. 1, lines 15-22; and col. 4, lines 36-48.

As discussed supra, Asanae'699 does not disclose the use of magnetic material coated with a coloring agent as recited in the instant claims. However, Asanae'699 does not limit the type of magnetic particles used in its magnetic toner. Asanae'699 discloses that the magnetic powder is "preferably formed to have an average particle size of between 0.1 to 3 μm ." Col. 3, lines 4-5.

EP'507 discloses black magnetic composite particles comprising magnetite particles surface coated with carbon black, which are within the compositional limitations recited in instant claim 34. See Table 6 at page 32, black magnetic

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composite particles example 12. The black magnetic composite particles have an average particle size of 0.24 μm . The average particle size of 0.24 μm is within the range of 0.20 to 0.40 μm recited in instant claim 37 and is also within the preferred range of 0.1 to 3 μm disclosed by Asanae'699. EP'507 exemplifies a magnetic toner comprising a binder resin and 40 wt% of said black magnetic composite particles. See page 20, lines 45-52, and Table 7 at page 35, toner example 20. The magnetic toner has a volume resistivity of $2.6 \times 10^{14} \Omega\cdot\text{cm}$ and an average particle size of 9.8 μm . See Table 7 at page 36, toner example 20. EP'507 further teaches that the volume resistivity of magnetic toner is usually not less than $10^{13} \Omega\cdot\text{cm}$. Page 12, line 58, to page 13, line 1. The amount of 40 wt% of black magnetic composite particles is within the range of 10 wt% to 40 wt% recited in instant claim 32 and within the range of 20 to 60 wt% taught by Asanae'699. The toner volume resistivity disclosed by EP'507 is within the range of not less than $10^{13} \Omega\cdot\text{cm}$ required by Asanae'699. EP'507 discloses that its black magnetic composite particles have excellent fluidity, blackness, and dispersibility in a binder resin. Page 3, lines 31-32. EP'507 further discloses that toners comprising its carbon black surface coated magnetic particles have excellent fluidity and

blackness. The toners provide high quality images and can be used in high speed copiers. Page 3, lines 27-30 and 33-35.

EP'507 does not disclose that its magnetic toner can be used in a two-component developer comprising a magnetic carrier as recited in the instant claims and disclosed by Asanae'699. However, as discussed supra, EP'507's magnetic toner meets the limitations of the magnetic toner required by Asanae'699 for its two-component developers. EP'507 further teaches the its magnetic toner has excellent blackness, fluidity, and dispersibility in a binder resin.

Thus, it would have been obvious for a person having ordinary skill in the art to use EP'507's magnetic toner in the two-component developer disclosed by Asanae'699, because that person would have had a reasonable expectation of successfully obtaining an image forming apparatus comprising said two-component developer having the properties disclosed by Asanae'699 and providing high quality black toned images.

11. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asanae'699 combined with EP'507, as applied to claim 32 above, further combined with additional teachings in Asanae'699 and EP'507.

The combined teachings of Asanae'699 and EP'507 render obvious an image forming apparatus as described in paragraph 10 above, which is incorporated herein by reference.

Neither Asanae'699 nor EP'507 exemplifies a magnetic toner comprising magnetic powder in an amount of 10 to 30 wt% as recited in the instant claim.

However, as discussed in paragraph 10 above, Asanae'699 discloses that its magnetic toner preferably comprises 20 to 60 wt% of magnetic powder. Col. 3, lines 14-15. The lower end of the preferred range of 20 to 60 wt% disclosed by Asanae'699 overlaps the range recited in the instant claims. EP'507 discloses that the amount of binder resin in its black magnetic toner is "usually 50 to 900 parts by weight, preferably 50 to 400 parts by weight based on 100 parts by weight" of the magnetic particles. EP'507, page 12, lines 41-42. Thus, the amount of EP'507's black magnetic composite can be in the range of about 10 to 68 wt%, preferably about 20 to 68 wt%, based on the weight of the magnetic toner. The lower end of the preferred range of 20 to 68 wt% overlaps the range recited in the instant claims and overlaps the preferred range disclosed by Asanae'699.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Asanae'699 and

EP'507, to adjust, through routine experimentation, the amount of carbon black surface coated magnetic particles in EP'507's toner example 20, such that the amount is within the amount range recited in instant claim 35, and to use the resultant magnetic toner in the developer disclosed by Asanae'699, because that person would have had a reasonable expectation of successfully obtaining an image forming apparatus having the properties disclosed by Asanae'699 and EP'507.

12. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asanae'699 combined with EP'507, as applied to claim 32 above, further combined with US 5,866,289 (Asanae'289).

The combined teachings of Asanae'699 and EP'507 render obvious an image forming apparatus as described in paragraph 10 above, which is incorporated herein by reference.

Neither reference discloses that the magnetic toner has a volume mean particle size of 2.5 to 10 μm as recited in the instant claim.

Asanae'289 teaches that to produce images with a high resolution, the volume average particle size of magnetic toners in a two-component developer is 5 to 15 μm , preferably 5 to 12 μm . Col. 2, lines 51-53. The lower end of the particle

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size range of 5 to 12 μm overlaps the range recited in the instant claims.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Asanae'289, to adjust, through routine experimentation, the particle size of the magnetic toner disclosed by EP'507, such that the resulting magnetic toner has a volume average particle size that is within the size range recited in instant claim 40, and to use the resultant magnetic toner in the developer disclosed by Asanae'699, because that person would have had a reasonable expectation of successfully obtaining an image forming apparatus having the benefits disclosed by Asanae'699 and EP'507 and providing black toned images with improved resolution.

13. Claims 10-16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asanae'699 combined with EP'507 and US 5,771,426 (Oka).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asanae'699 combined with EP'507 and Oka.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asanae'699 combined with EP'507, Asanae'289, and Oka.

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The combined teachings of Asanae'699 and EP'507 render obvious an image forming apparatus as described in paragraph 10 above, which is incorporated herein by reference.

The combined teachings of Asanae'699 and EP'507 render obvious an image forming apparatus as described in paragraph 11 above, which is incorporated herein by reference.

The combined teachings of Asanae'699, EP'507, and Asanae'289 render obvious an image forming apparatus as described in paragraph 12 above, which is incorporated herein by reference.

As discussed in paragraph 10, supra, Asanae'699 discloses an image forming apparatus comprising a container comprising the magnetic toner and a developer bearing member. However, neither Asanae'699 nor EP'507 discloses a developing unit as recited in the instant claims.

Oka discloses a developing unit that meets the additional limitations recited in instant claims 10 and 13. Oka's developing unit 2 comprises (1) a developer carrier 4 which conveys a two-component developer comprising a magnetic toner and a magnetic carrier; (2) a doctor blade 6 for regulating the amount of the two-component developer carried on the developer carrier 4 by scraping off the developer therefrom; (3) a developer storing container 10 for storing the developer

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scraped-off by the first regulating member; (4) a developer-holding container 11; and (5) a toner hopper 8 for storing fresh magnetic toner 3a to be replenished into the two-component developer on the developer carrier 4. The toner hopper 8 is adjoined to said developer-holding container 10 at an upstream side of the container 10 in a direction in which the developer carrier 4 conveys the two-component developer. The toner hopper 8 has "an opening 8a contacting the developer deposited" on the developer carrier 4 and "forming a first toner layer, and the developer existing in the container 10 and forming a second developer layer." The two-component developer 3-1 forming a first layer on the developer carrier 4 "is conveyed toward the developing position while having its amount regulated by the doctor blade 6. At the developing position, the developer develops a latent image electrostatically formed on the drum 1." The "developer 3-2 forming a second layer of developer and removed by the doctor blade 6 moves, within the container 10, towards the opening 8a at a position remote from the sleeve 1 [sic: 4, developer carrier] due to its own internal pressure and weight." The "volume of the developer 3-2 varies in accordance with the toner concentration in the developer" on the developer carrier 4. According to Oka, "[s]pecially, when the toner concentration is high, the area over the developer 3-1 on the

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sleeve 4 and to be conveyed to the developing position in a great ratio contacts the fresh toner 3a is reduced. As a result, the amount of toner 3a to be taken by the developer 3-1 is reduced. Conversely, when the toner concentration is low, the above area is increased with the result that the toner 3a is taken into the developer 3-1." Col. 8, line 31, to col. 9, line 55; and Fig. 1. Accordingly, Oka's developing unit has the property recited in instant claims 10 and 13. Oka further discloses an imaging forming method comprising the steps of developing an electrostatic latent image on image carrier drum 1 with the two-component developer carried on the developer sleeve 4 in the developing unit 2. See Fig. 1.

Oka discloses that its developing unit is capable of sufficiently charging the magnetic toner in a two-component developer even when used in a high-speed image forming apparatus. The developing unit is also capable of providing toned images with stable image densities without background contamination. Col. 6, lines 3-13.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Oka, to use Oka's developing unit in the image forming apparatus rendered obvious over the combined teachings of Asanae' 699 and EP' 507, because that person would have had a reasonable expectation of

successfully obtaining an image forming apparatus and an image forming method that are capable of stably providing images without decrease in image density and without background contamination.

14. Claims 1-3, 5, 6, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asanae'699 combined with EP'507, as applied to claims 32-34, 36, and 37 above, further combined with additional teachings in EP'507.

Asanae'699 combined with EP'507 renders obvious an imaging apparatus as discussed in paragraph 10 above, which is incorporated herein by reference.

EP'507's black magnetic toner in example 20 has a saturation magnetization of 29.6 emu at a magnetic field of 10 kOe, which is outside the range of 10 emu/g to 25 emu/g at a magnetic field of 10 kOe recited in the instant claims. However, EP'507 teaches that the saturation magnetization of its toner may be in the preferred range of 20 to 80 emu/g at a magnetic field of 10 kOe. EP'507, page 13, lines 6-7. The lower end of the preferred saturation magnetization range at a magnetic field of 10 kOe disclosed by EP'507 overlaps the range recited in the instant claims.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of EP'507, to adjust, through routine experimentation, the amount of carbon black surface coated magnetic particles in the black magnetic toner in EP'507's example 20, such that the black magnetic black toner has a saturation magnetization is within the saturation magnetization range at a magnetic field of 10 kOe recited in the instant claims, because that person would have had a reasonable expectation of successfully obtaining a two-component developer and an image forming apparatus comprising said two-component developer having the properties disclosed by Asanae'699 and providing high quality black toned images as disclosed by EP'507.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asanae'699 combined with EP'507, as applied to claim 1 above, further combined with additional teachings in EP'507.

The combined teachings of Asanae'699 and EP'507 render obvious a two-component developer as described in paragraph 14 above, which is incorporated herein by reference.

Neither Asanae'699 nor EP'507 exemplifies a magnetic toner comprising magnetic powder in an amount of 10 to 30 wt% as recited in the instant claim.

However, as discussed in paragraph 10 above, Asanae'699 discloses that its magnetic toner preferably comprises 20 to 60 wt% of magnetic powder. Col. 3, lines 14-15. The lower end of the preferred amount disclosed by Asanae'699 overlaps the range recited in the instant claims. EP'507 discloses that the amount of binder resin in its black magnetic toner is "usually 50 to 900 parts by weight, preferably 50 to 400 parts by weight based on 100 parts by weight" of the magnetic particles. EP'507, page 12, lines 41-42. Thus, the amount of EP'507's black magnetic composite can be in the range of about 10 to 68 wt%, preferably about 20 to 68 wt%, based on the weight of the magnetic toner. The lower end of the preferred range of about 20 to 68 wt% taught by EP'507 overlaps the range recited in the instant claims and overlaps the preferred range disclosed by Asanae'699.

As discussed in paragraph 14 above, EP'507 teaches that the saturation magnetization of its toner may be in the range of preferably 20 to 80 emu/g at a magnetic field of 10 kOe. EP'507, page 13, lines 6-7. The lower end of the preferred saturation magnetization range at a magnetic field of 10 kOe

disclosed by EP'507 overlaps the range recited in the instant claims.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Asanae'699 and EP'507, to adjust, through routine experimentation, the amount of carbon black surface coated magnetic particles in EP'507's toner example 20, such that the amount is within the amount range recited in instant claim 4 and the saturation magnetization is within the saturation magnetization range at a magnetic field of 10 kOe recited in instant claim 4, because that person would have had a reasonable expectation of successfully obtaining a two-component developer and an image forming apparatus comprising said two-component developer having the properties disclosed by Asanae'699 and providing high quality black toned images as disclosed by EP'507.

16. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asanae'699 combined with EP'507, as applied to claim 1 above, further combined with Asanae'289.

The combined teachings of Asanae'699 and EP'507 render obvious a two-component developer as described in paragraph 14 above, which is incorporated herein by reference.

Neither reference discloses that the magnetic toner has a volume mean particle size of 2.5 to 10 μm as recited in the instant claims.

Asanae'289 teaches that to produce images with a high resolution, the volume average particle size of magnetic toners in a two-component developer is 5 to 15 μm , preferably 5 to 12 μm . Col. 2, lines 51-53. The lower end of the preferred particle size range disclosed by Asanae'289 overlaps the range recited in the instant claims.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Asanae'289, to adjust, through routine experimentation, the particle size of the magnetic toner disclosed by EP'507, such that the resulting magnetic toner has a volume average particle size that is within the range recited in instant claim 9, because that person would have had a reasonable expectation of successfully obtaining a two component developer having the benefits disclosed by Asanae'699 and EP'507 and providing black toned images with improved resolution.

17. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asanae'699 combined with EP'507 and Oka.

The combined teachings of Asanae'699 and EP'507 render obvious an image forming apparatus as described in paragraph 14 above, which is incorporated herein by reference.

As discussed in paragraph 14, supra, Asanae'699 discloses an image forming apparatus comprising a container comprising the magnetic toner and a developer bearing member. However, neither Asanae'699 nor EP'507 discloses a developing unit as recited in the instant claims.

Oka discloses a developing unit that meets the limitations recited in instant claim 20. The discussion of Oka in paragraph 13 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Oka, to use Oka's developing unit in the image forming apparatus rendered obvious over the combined teachings of Asanae'699 and EP'507, because that person would have had a reasonable expectation of successfully obtaining an image forming apparatus that is capable of stably providing images without decrease in image density and without background contamination.

18. Applicants' arguments filed on Apr. 29, 2004, with respect to the rejections set forth in paragraphs 10-17 above have been fully considered but they are not persuasive.

Applicants assert that it would not have been obvious to use the magnetic toner of EP'507 in the two-component developer of Asanae'699. Applicants assert that if the magnetic toner of a one-component developer, which has a high saturation magnetization, is used as the magnetic toner in a two-component developer comprising a magnetic carrier, the magnetic toner of the one-component developer "receives a strong attraction force from a magnet contained in the developing sleeve as well as the electrostatic force formed between a carrier and the developer, and thereby the one-component developer has poor developing ability, resulting in serious decrease of image density."

However, applicants' assertion regarding the results using a magnetic one-component developer as the toner in a two-component developer are mere attorney arguments. Applicants have not provided any evidence supporting their assertion. As discussed in the rejection in paragraph 10 above, EP'507 teaches a black magnetic toner that meets the toner requirements disclosed by Asanae'699. EP'507 also teaches the advantages of using its black magnetic toners. In particular, EP'507's black magnetic toner has excellent fluidity, blackness, and dispersibility in a binder resin. The toners provide high quality images and can be used in high speed copiers. As discussed in paragraph 10, Asanae'699 is also interested in

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providing high quality images. Thus, EP'507 provides reason, suggestion, and motivation to a person having ordinary skill art to use EP'507's black magnetic toner as the toner in Asanae'699's two-component developer. Accordingly, for the reasons discussed in the rejections in paragraphs 10-17, the two component developer recited in instant claims is prima facie obvious over the combined teachings of the cited prior art.

Applicants further assert that the toner in the instant invention has a smaller saturation magnetization than the one-component developer.

However, neither instant claims 10-19, 22, 32-37, and 40 nor the instant specification require the magnetic toner recited in instant claims 10-19, 22, 32-37, and 40 to have a particular saturation magnetization. In fact, the instant specification at page 17, lines 3-11, discloses that "[i]t is preferable that the toner have a saturation magnetization of 10 emu/g to 25 emu/g, more preferably 12 emu/g to 22 emu/g." Applicants cannot argue patentability based on limitations that are not present in the claims.

With respect to instant claims 1-6, 9, 20, and 38, which require the toner to have a saturation magnetization of 10 emu/g to 25 emu/g at a magnetic field of 10 kOe, as discussed in rejection of paragraph 14 above, EP'507 teaches that its black

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magnetic toner may have a saturation magnetization preferably in the range 20 to 80 emu/g at a magnetic field of 10 kOe. The lower end of the preferred saturation magnetization range disclosed by EP'507 overlaps the range recited in the instant claims. Thus, EP'507 teaches magnetic one-component developers having the same saturation magnetization as applicants' magnetic toners. This teaching in EP'507 controverts applicants' statement that the toner in its invention has a smaller saturation magnetization than the one-component developer. Accordingly, for the reasons discussed in the rejections in paragraphs 14-17, the two component developer recited in instant claims 1-6, 9, 20, and 38 is prima facie obvious over the cited prior art.

(Applicants state that claim 4 was not rejected over prior art. However, upon further consideration of the teaching in the prior art, claim 4 has been rejected for the reasons discussed in paragraph 15 above.)

19. Claims 8, 21, 30, and 39 are allowable over the prior art of record.

The prior art of record does not teach or suggest a toner comprising a polyester binder resin and a magnetic material, as recited in the instant claims, and wherein said toner has a

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molecular weight distribution as recited in instant claims 8, 21, 30, and 39, and contains a THF-insoluble component in an amount of 2 to 40 wt% of said toner.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD

Oct. 7, 2004

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